

REMARKS

In an Office Action mailed on December 24, 2002, the drawings and Specification were objected to, claims 6, 9, 16, 26 and 27 were objected to, and claims 1 through 41 were rejected. These objections and rejections are respectfully traversed.

Proposed changes to FIG. 5A have been submitted. The Specification has been amended. No new matter has been added through these changes and amendments. Claims 1, 6, 8, 9, 16, 21, 27, 28, 33, 34, 39 and 40 have been amended. Claims 1 through 41 are pending in the application. Claim 40 was amended solely to correct a misspelled word. Reconsideration and reexamination of the application as amended is respectfully requested.

In the Specification

The Examiner objected to the Specification and suggested a change to the Specification related to the substitution of "intermediate hub 76" for "intermediate ferrule 76" in the Specification at page 5, line 30. This objection to the Specification is respectfully traversed.

Applicant agrees with the Examiner's suggestion and is submitting an amendment to the Specification to make this change. Applicant is also amending the Specification to make the same substitution of "intermediate hub 76" for "intermediate ferrule 76" at two other locations in the Specification.

No new material is being added to the Specification by these amendments to the Specification and entry of these amendments is respectfully requested. With these amendments, Applicant submits that the objections to the Specification have been overcome and withdrawal of the objection is respectfully requested.

In the Drawings

The Examiner objected to the Drawings and noted that the Specification referred to reference numbers in FIG. 5A that were not present in FIG. 5A. This objection to the Drawings is respectfully traversed.

in the Specification but were inadvertently omitted from FIG. 5A as submitted with the application. The addition of these reference numbers to FIG. 5A makes the Specification and the drawing consistent with one another.

No new material is being added to the Specification or drawings through the entry proposed replacement FIG. 5A. Applicant respectfully requests the Examiner enter the proposed replacement FIG. 5A. With these amendments, Applicant submits that the objections to the Drawings have been overcome and withdrawal of the objection is respectfully requested.

In the Claims

Claim Objections for Informalities

The Examiner objected to claim 6, 9, 26 and 27 for informalities. These objections are respectfully traversed.

Claim 6 has been amended as suggested by the Examiner by inserting "optical fiber" to describe the connector referred to in line 2.

Claim 9 has been amended as suggested by the Examiner to remove the antecedent basis issues in lines 10 and 11.

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The Examiner suggested that claim 26 be amended to refer to "one of the axial openings" as opposed to "the axial opening" in line 4 of the claim. However, Applicant would like to point out that claim 21, from which claim 26 depends, does not recite more than one axial opening. Thus, Applicant submits that the Examiner's objection to claim 26 is incorrect and requests its withdrawal.

Claim 27 has been amended as suggested by the Examiner to depend from claim 26. The Examiner also suggested that claim 27 be amended to recite "the other axial opening" in place of "the axial opening" in line 5. However, Applicant would like to point out that only one axial opening is recited in the claims from which claim 27 depends. The Examiner's suggested amendment is therefore not appropriate. The Examiner further suggested that an amendment to lines 6 and 7 to recite "one of the open ends of the adapter housing" in place of "an open end of the adapter housing." This amendment has been made.

Applicant submits that the Examiner's objections to claims 6, 9, 26, and 27 for informalities have been overcome and respectfully requests withdrawal of these objections.

The Examiner also objected to claim 16 under 37 C.F.R. §1.75(d) as unsupported by the Specification for use of the recited element "shoulder." This objection is traversed.

Claim 16 has been amended to recite inner opposing ridges in place in place of the element objected to by the Examiner. Applicant submits that the Examiner's objection to claim 16 under 37 C.F.R. §1.75(d) has been overcome and respectfully requests withdrawal of the objection.

Claim Rejections under 35 U.S.C. §112

The Examiner rejected claims 28 to 33 under 35 U.S.C. §112, second paragraph, as omitting an essential element of the claims. Specifically, the Examiner cited the use of "first" as a modifier of elements recited in claim 33. None of the other claims recited a second or additional element corresponding the first element recited in claim 33. This rejection is respectfully traversed.

As amended, claim 33 recites only that an optical fiber cable and connector are connected to the adapter. Recitation of the word "first" has been removed from claim 33, as suggested by the Examiner.

Applicant submits that claims 28 to 33 do not omit a missing element and are thus allowable under 35 U.S.C. §112, second paragraph. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 34 to 39 under 35 U.S.C. §112, second paragraph, as omitting an essential element of the claims. Specifically, the Examiner stated that the relationship between the axial cavity and the main housing. This rejection is respectfully traversed.

As amended, claim 39 recites, in part, that the axial cavity is within the main housing. Applicant submits that claims 34 to 39 do not omit a missing element and are thus allowable under 35 U.S.C. §112, second paragraph. Reexamination and reconsideration is respectfully requested.

Claim Rejections under 35 U.S.C. §102

The Examiner rejected claims 1, 4, 8, 9, 12, 14 to 16, 19, 34 and 37, under 35 U.S.C. §102(b) as anticipated by Oda, U.S. Patent No. 5,642,450. These rejections are respectfully traversed.

Claim 1 as amended recites, in part, that the attenuation hub include an axial opening extending from a first end of the hub to a second end of the hub, the axial opening including an optical fiber defining an optical path between the first end of the hub and the second end of the hub Claim 1 further recites that the first and second ferrule ends are fixed in position with respect to each other.

The Examiner refers to FIG. 4 in Oda as the basis for the rejection of claim 1 under 35 U.S.C. §102(b). Oda teaches an adapter 36 for receiving optical fiber connectors in either end along an axis A. Within adapter 36 are a pair of ferrules 54 and 58 which are movable with respect to each other and biased apart by a spring 66. Without a connector inserted into each end of adapter 36, as shown in FIG. 4 of Oda, ferrules 54 and 58 are not in contact with each other at their inner ends 54b and 58a, respectively. When the inner faces of these ferrules are not touching, there is not an optical path defined from outer end 54a of ferrule 54 and outer end 58b of ferrule 58. At col. 6, lines 13 to 16, Oda states that when the inner ferrule ends of ferrules 54 and 58 are not in physical contact, the optical path between the outer ferrule ends of ferrules 54 and 58 is broken. Indeed, this breaking of the optical path without two fiber optic connectors installed in adapter 36 is a key feature of the disclosure of Oda. See col. 1, line 44 to col. 2, line 17, where Oda describes the undesirability of having an optical path through the adapter when connectors are not attached to each end of the adapter. See also col. 4, lines 53 to 63, where it states that the transmission of light through the adapter is prevented when two connectors are not inserted into the adapter. The insertion of the second connector overcomes the pressure of spring 30 and forces the two ferrules together. Only then is an optical path formed through the adapter.

Thus, Oda specifically teaches away from the definition of an optical path between the first end of an attenuation hub within an adapter and the second end of the

attenuation hub. Oda also specifically teaches away from the first and second ferrule ends being fixed in position with respect to each other.

For at least these reasons, Applicant submits that Oda does not anticipate claim 1 and claim 1 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 4 depends from and further limits claim 1. Claim 4 recites that the optical path includes two segments of optical fiber, each segment having an inner end, and an air gap is defined in the optical path between the inner ends of the two segments.

Oda does define an air gap between the ends of optical fiber held within ferrules 54 and 58 when two connectors are not inserted into the ends of adapter 36. However, as stated above, when no or only one connector is inserted within adapter 36, no optical path between the ends of the attenuation hub exists. When an optical path does exist, that is, when two connectors are inserted within adapter 36, the air gap between the two segments of optical fiber in ferrules 54 and 58 does not exist.

For at least these reasons and those stated above with regard to claim 1, Applicant submits that claim 4 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 8 depends from and further limits claim 1. Claim 8 recites, in part, that the attenuation hub is enclosed within an inner housing formed from two identical halves. Within the inner housing are the attenuation hub and first and second sleeves positioned about the first and second ends of the hub.

Contrary to the Examiner's assertions, 44 and 48 are not halves of an inner housing but are hooks for securing optical fiber connectors to the ends of adapter 36. Hooks 44 and 48 are part of annular holder 46 and 50, respectively, which are disclosed as being bonded to end surfaces of first housing 38, within which are located ferrules 54 and 58, see col. 5, lines 27 to 54. First housing 38 encloses ferrules 54 and 58 but not sleeve 62 or sleeve 64. Annular holders 46 and 50 enclose sleeves 62 and 64 but not ferrules 54 and 58. Oda does not teach or disclose that annular holders 46 and 50 are identical, indeed, the lower portions of the holders are not even visible in FIG. 4. Oda does not teach or disclose that first housing 38 is formed from two identical halves. No

part lines or split lines are indicated and the text does not suggest how first housing is constructed.

Oda does not teach that the attenuation hub is enclosed within an inner housing formed of two identical halves and that a pair of sleeves be mounted within the inner housing about the end of the attenuation hub.

For at least these reasons and those cited above with regard to claim 1, Applicant submits that claim 8 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 9 as amended recites, in part, that an adapter includes a housing within which is mounted an attenuation hub having first and second ends, and an optical path extending between first and second ends of the housing. Claim 9 also recites that the first and second ends of the attenuator hub are fixed relative to each other.

As noted above with regard to claim 1, Oda does not define an optical pathway through adapter 36 unless optical fiber connectors are inserted into the ends of adapter 36, forcing the inner ends of ferrules 54 and 58 into contact with each other. The ends of ferrule 54 are movable with respect to the ends of ferrule 58.

For at least these reasons, Applicant submits that claim 9 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 12 depends from and further limits claim 9. Claim 12 recites in part that the attenuation hub includes two segments of optical fiber and an air gap is included between the inner ends of the two segments within the attenuation hub.

As noted above with regard to claim 4, Oda does define an air gap between the ends of optical fiber held within ferrules 54 and 58 when two connectors are not inserted into the ends of adapter 36. However, as stated above, when no or only one connector is inserted within adapter 36, no optical path between the ends of the adapter housing exists. When an optical path does exist, that is, when two connectors are inserted within adapter 36, the air gap between the two segments of optical fiber in ferrules 54 and 58 does not exist.

For at least these reasons and those cited above with regard to claim 9, Applicant submits that claim 12 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 14 depends from and further limits claim 9. Claim 14 recites in part that a first optical fiber cable including an optical fiber connector is received within the first end of the housing of the adapter and the optical fiber of the cable is optically connected with the fiber of the attenuation hub.

As noted above with regard to claim 9, with only a single connector inserted within one of the ends of adapter 36, Oda does not teach an optical path between the ends of adapter 36. The insertion of an optical fiber cable connector within adapter 36 will move the ferrule outer ends one of ferrule 54 or 58, as the ferrule ends are not fixed in position with respect to each other.

For at least these reasons and those stated above with regard to claim 9, Applicant submits that claim 14 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 15 depends from and further limits claim 14. For at those reasons cited above with to claim 14, Applicant submits that claim 15 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 16 as amended recites, in part, an adapter including a housing within which is mounted an attenuation hub. The attenuation hub includes a first and second ferrule end joined and fixed in position with respect to each other. An optical path is defined between outer faces of the two ferrule ends and the outer faces are engaged within the first and second sleeves.

As noted above with regard to Oda, ferrules 54 and 58 are not joined and are movable with respect to each other. When no connectors are inserted within the open ends of adapter 36, there is no optical path defined through the attenuation hub.

For at least these reasons, Applicant submits that claim 16 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 19 depends from and further limits claim 16. Claim 19 recites that the optical fiber within the attenuation hub is in two segments and an air gap is defined between the inner ends of the segments.

As noted above, Oda only includes an air gap between ferrules 54 and 58 when less than two optical fiber connectors have been inserted in to the ends of adapter 36. Without an optical fiber connector inserted into each end of adapter 36, there is no optical path defined through adapter 36. When an optical path is established through between outer faces 54a and 58b by the insertion of connectors into both sides of adapter 36, the air gap defined between ferrules 54 and 58 disappears.

For at least these reasons and those cited above with regard to claim 16, Applicant submits that claim 19 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 34 as amended recites, in part, a method of assembling a fiber optic bulkhead adapter including providing first and second ferrules, each ferrule including first and second opposing ends and an axial opening. The first ferrule includes a first contact face at its first end and the second ferrule includes a second contact face at its second end. Optical fiber is inserted within axial openings of the ferrules to form an optical path from the first contact face to the second contact face. The ferrules are joined to each other and the contact faces fixed in position with respect to each other.

Oda teaches that ferrules 54 and 58 must be movable with respect to each other and that the ferrules not be joined to each other. Oda teaches away from the method of claim 34.

For at least these reasons, Applicant submits that claim 34 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration are respectfully requested.

Claim 37 depends from and further limits claim 34. Claim 37 recites that the optical fiber within the optical path is in two segments and an air gap is defined within the optical path between inner ends of the two segments within the attenuation hub.

As noted above, Oda recites an air gap between ferrules 54 and 58 only when the optical path between the contact faces on either end of the ferrules is broken. When the

optical path exists between the contact faces, the air gap between the two ferrules has been removed by pushing the ferrules into contact with each.

For at least these reasons and those stated above with regard to claim 34, Applicant submits that claim 37 is not anticipated by Oda and is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim Rejections under 35 U.S.C. §103

The Examiner rejected claims 6 and 7 under 35 U.S.C. 103(a) as unpatentable over Oda in view of Underwood et al., U.S. Patent No. 5,737,464. These rejections are respectfully traversed.

Claim 6 depends from and further limits claim 1. Claim 6 as amended recites that the adapter of claim 1 is sized to receive an SC optical fiber connector in the first and second end.

The Examiner cites Oda as disclosing all of the elements of the adapter of claim 1, while Underwood teaches that the adapter be sized to receive SC optical fiber connectors. However, as noted above, Oda does not disclose or teach all of the elements of claim 1. Therefore the combination of Oda and Underwood cannot render claim 6 obvious.

Claim 7 depends from claim 6 and recites that the adapter includes mounting tabs extending outward from a top and a bottom of the housing.

The Examiner similarly cites Oda as disclosing the elements of claim 1, while Underwood teaches that the adapter be sized to receive SC optical fiber connectors and include mounting tabs extending from opposing sides of the housing. As noted above with regard to claims 1 and 6, Oda does not teach or disclose all of the elements of the adapter of claim 1. Therefore the combination of Oda and Underwood cannot render claim 7 obvious.

For at least these reasons and those cited above with regard to claim 1, Applicant submits that the cited prior art does not render claims 6 and 7 obvious and that claims 6 and 7 are in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 21, 24, 26 to 28, 31, 33, 40 and 41 under 35 U.S.C. §103(a) as unpatentable over Oda in view of Hultermans, U.S. Patent No. 5,542,015. These rejections are respectfully traversed.

Claim 21 as amended recites, in part, an adapter assembly, the adapter including an attenuation hub including first and second ends fixed in position with respect to each other and an optical path extending between the ends of the attenuation hub. The assembly also includes a bulkhead with an opening within which the adapter is mounted and the bulkhead defines a plane which passes through the attenuation hub.

Claim 28 as amended recites, in part, an adapter assembly, the adapter including an attenuation hub including first and second ends fixed in position with respect to each other and an optical path extending between the ends of the attenuation hub. The assembly also includes a bulkhead with an opening within which the adapter is mounted.

The Examiner cites Oda as teaching all of the elements of the adapter while mounting of the adapter to a bulkhead is either obvious to one skilled in the art or taught by Hultermans. However, as noted above, Oda does not teach that the ends of the attenuation hub be fixed in position with respect to each other, as ferrules 54 and 58, with their associated ends, are movable with respect to each other. Also as noted above, Oda does not provide an optical path between the first and second ends unless a connector is inserted into each of the ends of adapter 36. Hultermans does not teach or suggest any intervening structure within the adapter such as an attenuation hub. As neither Oda nor Hultermans teach or suggest the adapter of the assembly of claims 21 and 28, the combination of Oda and Hultermans does not render claim 21 or claim 28 obvious.

For at least these reasons, Applicant submits that the cited prior art does not render claims 21 and 28 obvious and that claims 21 and 28 are in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 24 depends from and further limits claim 21. Claim 24 recites that the optical fiber within the optical path includes two segments and an air gap is formed between inner ends of the two segments within the attenuation hub.

As noted above, Oda teaches that an optical path does not exist between the ends ferrules 54 and 58 when an air gap exists between the segments of optical fiber within ferrules 54 and 58. When the ferrules are pushed together to establish an optical path, the

air gap is not present. Hultermans does not teach or suggest any intervening structure within the adapter such as an attenuation hub. Thus, neither Oda nor Hultermans teach or suggest the adapter of the assembly of claim 24 and the combination of Oda and Hultermans does not render claim 24 obvious.

For at least these reasons and those cited above with regard to claim 21, Applicant submits that the cited prior art does not render claim 24 obvious and that claim 24 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 26 depends from and further limits claim 21. Claim 26 recites, in part, that a first optical fiber cable with a first connector has been inserted into one of the ends of the adapter.

As noted above, Oda teaches that the optical path between the outer ends of ferrules 54 and 58 is broken with only one connector inserted into adapter 36, for safety and other reasons. Thus, Oda does not teach or suggest that an optical path be established through the attenuation hub when one connector is inserted into one of the ends of the adapter. Hultermans does not teach or suggest any intervening structure within the adapter such as an attenuation hub. Thus, neither Oda nor Hultermans teach or suggest the adapter of the assembly of claim 26 and the combination of Oda and Hultermans does not render claim 26 obvious.

For at least these reasons and those cited above with regard to claim 21, Applicant submits that the cited prior art does not render claim 26 obvious and that claim 26 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 27 as amended depends from and further limits claim 26. Claim 27 as amended recites, in part, that a second optical fiber cable with a second connector has been inserted within the adapter.

As noted above, neither Oda nor Hultermans teaches or suggests that the adapter include an attenuation hub with ends fixed in position relative to each other. Indeed, the insertion of a second connector within adapter 36 overcomes the bias of spring 66 holding ferrules 54 and 58 apart and moves inner end 54b and 58a into contact with each other.

For at least these reasons and those cited above with regard to claim 26, Applicant submits that the cited prior art does not render claim 27 obvious and that claim 27 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 31 depends from and further limits claim 28. Claim 31 recites that the optical fiber within the optical path includes two segments and an air gap is formed between inner ends of the two segments within the attenuation hub.

As noted above, Oda teaches that an optical path does not exist between the ends ferrules 54 and 58 when an air gap exists between the segments of optical fiber within ferrules 54 and 58. When the ferrules are pushed together to establish an optical path, the air gap is not present. Hultermans does not teach or suggest any intervening structure within the adapter such as an attenuation hub. Thus, neither Oda nor Hultermans teach or suggest the adapter of the assembly of claim 31 and the combination of Oda and Hultermans does not render claim 31 obvious.

For at least these reasons and those cited above with regard to claim 28, Applicant submits that the cited prior art does not render claim 31 obvious and that claim 31 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 33 depends from and further limits claim 28. Claim 33 recites, in part, that a first optical fiber cable with a first connector has been inserted into one of the ends of the adapter.

As noted above, Oda teaches that the optical path between the outer ends of ferrules 54 and 58 is broken with only one connector inserted into adapter 36, for safety and other reasons. Thus, Oda does not teach or suggest that an optical path be established through the attenuation hub when one connector is inserted into one of the ends of the adapter. Hultermans does not teach or suggest any intervening structure within the adapter such as an attenuation hub. Thus, neither Oda nor Hultermans teach or suggest the adapter of the assembly of claim 26 and the combination of Oda and Hultermans does not render claim 26 obvious.

For at least these reasons and those cited above with regard to claim 28, Applicant submits that the cited prior art does not render claim 33 obvious and that claim 33 is in

condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 40 recites, in part, a method of providing a fiber optic bulkhead adapter including an integral attenuator and mounting that adapter to an opening in a bulkhead.

Oda does not teach or suggest that ferrules 54 or 58 include any provision for attenuating an optical signal transmitted through adapter 36. The only element that would inherently provide attenuation within adapter 36 is the gap formed between inner faces 54b and 58a when connectors are not inserted in both ends of adapter 36. However, without connectors inserted in both ends, no signal can be transmitted through adapter 36 so the air gap cannot provide attenuation. Hultermans does not teach or suggest an adapter including an attenuation hub or any intervening structure between fiber optic cable connectors.

Applicant submits that the cited prior art does not render claim 40 obvious and that claim 40 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

Claim 41 depends from and further limits claim 40. Claim 40 recites that a fiber optic cable connector is connected to each end of the adapter.

As noted above, the only element of Oda that would inherently provide attenuation within adapter 36 is the gap formed between inner faces 54b and 58a when connectors are not inserted in both ends of adapter 36. However, when fiber optic cable connectors are inserted in both ends in both ends of adapter 36, the air gap between the inner faces is not present. Thus, with connectors connected to both ends of adapter 36, no attenuation structure is taught or suggested by Oda. Hultermans does not teach or suggest an adapter including an attenuation hub or any intervening structure between fiber optic cable connectors.

For at least these reasons and those cited above with regard to claim 40, Applicant submits that the cited prior art does not render claim 41 obvious and that claim 41 is in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 2, 3, 10 11, 17 and 18 under 35 U.S.C. §103(a) as unpatentable over Oda in view of Satoshi, JP-08122531. These rejections are respectfully traversed.

Claims 2 and 3 depend from and further limit claim 1. Claim 2 recites that a continuous length of fiber extends from the first end of the attenuation hub to the second end. Claim 3 recites that the optical fiber within the attenuation hub includes two segments fused to each other within the attenuation hub.

With regard to claim 2, the Examiner cites Oda as teaching the elements of the adapter of claim 1, from which these claims depend, and Satoshi as teaching that an attenuation hub include a continuous length of optical fiber from end to end. However, as noted above, Oda does not teach or suggest the elements of the adapter of claim 1. Further, adapter 36 of Oda is not combinable with the attenuator of Satoshi. Oda specifically teaches that ferrules 54 and 58 be movable with respect to each other. The continuous length of optical fiber of Satoshi could not be included in adapter 36 of Oda due to the movement of ferrules 54 and 58 within adapter 36. Such movement would result in the fiber breaking.

With regard to claim 3, the Examiner cites Oda as teaching the elements of the adapter of claim 1, from which these claims depend, and Satoshi as teaching that two segments of optical fiber be fused within the attenuation hub. However, as noted above, Oda does not teach or suggest the elements of the adapter of claim 1. While fused fiber might be incorporated within either or both of ferrules 54 and 58, the combination of Oda and Satoshi still does not teach or suggest an adapter with the ends of the attenuation hub fixed with respect to each other and in fact teaches away from such a construction of adapter 36.

Claims 10 and 11 depend from and further limit claim 9. Claims 10 and 11 provide limitations to the adapter of claim 9 similar to those provided to claim 1 by claims 2 and 3.

Claims 17 and 18 depend from and further limit claim 16. Claims 17 and 18 provide limitations to the adapter of claim 16 similar to those provided to claim 1 by claims 2 and 3.

The Examiner provided the same discussion for the rejection of claims 2 and 3, 10 and 11, and 17 and 18. The adapters of claims 9 and 16 include the same or similar limitations as those cited above with regard to the allowability of claims 2 and 3 over the cited prior art.

For at least these reasons, Applicant submits that the cited prior art does not render claims 2, 3, 10, 11, 17 and 18 obvious and that claims 2, 3, 10, 11, 17 and 18 are in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 5, 13 and 20 under 35 U.S.C. §103(a) as unpatentable over Oda in view of Fumio, JP-62121405. These rejections are respectfully traversed.

Claim 5 depends from and further limits claim 1. Claim 5 recites that the optical fiber within the attenuation hub includes two segments with inner ends and a filter is mounted between the inner ends of the segments.

The Examiner cites Oda as teaching the elements of the adapter of claim 1, from which these claims depend, and Fumio as teaching that two segments of optical fiber be mounted within a ferrule with a filter mounted between inner ends of the segments. However, as noted above, Oda does not teach or suggest the elements of the adapter of claim 1. While a filter might be incorporated within either or both of ferrules 54 and 58, the combination of Oda and Fumio still does not teach or suggest an adapter with the ends of the attenuation hub fixed with respect to each other and in fact teaches away from such a construction of adapter 36.

Claim 13 depends from and further limits claim 9. Claim 13 provides limitations to the adapter of claim 9 similar to those provided to claim 1 by claim 5.

Claim 20 depends from and further limits claim 16. Claim 20 provides limitations to the adapter of claim 16 similar to those provided to claim 1 by claim 5.

The Examiner provided the same discussion for the rejection of claims 5, 13 and 20. The adapters of claims 9 and 16 include the same or similar limitations as those cited above with regard to the allowability of claim 5 over the cited prior art.

For at least these reasons, Applicant submits that the cited prior art does not render claims 5, 13 and 20 obvious and that claims 5, 13 and 20 are in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 22, 23, 29, 30, 35 and 36 under 35 U.S.C. §103(a) as unpatentable over Oda and Hulterman, and further in view of Satoshi. These rejections are respectfully traversed.

Claims 22 and 23 depend from and further limit claim 21. Claim 22 recites that the optical fiber within the attenuation hub is a continuous segment, while claim 23 recites that the optical fiber within the attenuation hub includes two segments fused together within the hub.

Claims 29 and 30 depend from and further limit claim 28. Claim 29 recites that the optical fiber within the attenuation hub is a continuous segment, while claim 30 recites that the optical fiber within the attenuation hub includes two segments fused together within the hub.

Claims 35 and 36 depend from and further limit claim 34. Claim 35 recites that the optical fiber within the attenuation hub is a continuous segment, while claim 36 recites that the optical fiber within the attenuation hub includes two segments fused together within the hub.

The Examiner asserts that claims 22, 23, 29, 30, 35 and 36 recite the same limitations as claims 2, 3, 10, 11, 17 and 18, and applies the same rejections to claims 22, 23, 29, 30, 35 and 36 as were applied to claims 2, 3, 10, 11, 17 and 18. As noted above, the Examiner asserts that Hultermans teaches and suggests that an adapter be mounted to an opening in a bulkhead, and Satoshi teaches that an attenuator includes optical fiber extending between opposite ends of the attenuator. Satoshi also teaches that the optical fiber within an attenuator includes two segments of fiber fused within the attenuator. The Examiner thus asserts that Oda teaches the remaining elements of the adapter of claims 22, 23, 29 and 30, and the remaining elements of the method of claims 35 and 36.

Claims 22, 23, 29, 30, 35 and 36 all recite that the attenuation hub within the adapter have an optical path extending from a first end to a second end and that these ends be fixed in position with respect to each other. As noted above, Oda teaches that the

outer ends of ferrule 54 and 58 be movable with respect to each other. In addition, this relative movement of ferrules 54 and 58 teaches away from the inclusion of a continuous segment of optical fiber extending through the attenuation hub. Two segments of optical fiber fused together at inner ends within the attenuation hub may be adapted to either or both of ferrules 54 and 58 of Oda but this does not overcome Oda's teaching that the ends of the attenuation hub be movable with respect to each other. When the inner ends of ferrules 54 and 58 are not in physical contact with each other, there is no optical path defined between the ends of the attenuation hub.

Claim 34, from which claims 35 and 36 depend, is directed to a method of assembling an optical fiber bulkhead adapter including an attenuation hub with ends fixed in position relative to each other. As noted above, claim 34 is not anticipated by Oda. Also as noted above with regard to claims 22 and 29, Oda teaches away from the combination of adapter 36 with the continuous fiber segment extending through the attenuator of Satoshi due to ferrules 54 and 58 being movable with respect to each other. As noted above with regard to claims 23 and 30, the combination of Oda and Satoshi does not teach or suggest an adapter with the ends of the attenuation hub fixed with respect to each other and in fact teaches away from such a construction of adapter 36 of Oda.

For at least these reasons, Applicant submits that the cited prior art does not render claims 22, 23, 29, 30, 35 and 36 obvious and that claims 22, 23, 29, 30, 35 and 36 are in condition for immediate allowance. Reexamination and reconsideration is respectfully requested.

The Examiner rejected claims 25, 32 and 38 under 35 U.S.C. §103(a) as unpatentable over Oda and Hultermans and further in view of Fumio. These rejections are respectfully traversed.

Claim 25 depends from and further limits claim 21. Claim 25 recites that the optical fiber within the attenuation hub includes two segments with inner ends and a filter is mounted between the inner ends within the attenuation hub.

Claim 32 depends from and further limits claim 28. Claim 32 recites that the optical fiber within the attenuation hub includes two segments with inner ends and a filter is mounted between the inner ends within the attenuation hub.

Claim 38 depends from and further limits claim 34. Claim 38 recites that the optical fiber within the attenuation hub includes two segments with inner ends and a filter is mounted between the inner ends within the attenuation hub.

The Examiner asserts that claims 25, 32 and 38 recite the same limitations as claims 5, 13 and 20, and applies the same rejections to claims 25, 32 and 38 as were applied to claims 5, 13 and 20. As noted above, the Examiner asserts that Hultermans teaches and suggests that an adapter be mounted to an opening in a bulkhead, and Fumio teaches that the optical fiber within the attenuator include two segments with inner ends and a filter be mounted between the inner ends within the attenuator. The Examiner thus asserts that Oda teaches the remaining elements of the adapter of claims 25 and 32, and the method of claim 38.

Claims 25, 32 and 38 all recite that the attenuation hub with the adapter have an optical path extending from a first end to a second end and that these ends be fixed in position with respect to each other. As noted above, Oda teaches that the outer ends of ferrule 54 and 58 be movable with respect to each other. When the inner ends of ferrules 54 and 58 are not in physical contact with each, there is no optical path through the attenuation hub between the ends. The combination of Oda with Hultermans and Fumio does not teach or suggest that Oda be configured in this manner and in fact teaches away from such a construction.

For at least these reasons, Applicant submits that the cited prior art does render claims 25, 32 and 38 obvious and that claims 25, 32 and 38 are in condition for immediate allowance. Reexamination and reconsideration are respectfully requested.

The Examiner rejected claim 39 under 35 U.S.C. §103(a) as unpatentable over Oda in view of Beard, et al., U.S. Patent No. 5,317,663. This rejection is respectfully traversed.

Claim 39 depends from and further limits claim 34. Claim 39 as amended recites, in part, that the attenuation hub is mounted within an inner housing and further

comprising a main housing including a side access opening into an axial cavity within which the inner housing is mounted. The attenuation hub is recited as including an optical fiber mounted within a pair of ferrules with the ends of the ferrules fixed in position relative to each other.

The Examiner cites Beard as teaching or suggesting the use of a side access opening into an axial cavity of a main housing and cites Oda as teaching or suggesting the remaining elements of the method. However, as noted above, Oda does not teach or suggest an attenuation hub with the elements recited in claim 39 and in fact teaches away from such an attenuation hub. Beard does not teach or suggest that Oda could be so adapted.

For at least these reasons, Applicant submits that the cited prior art does not render claim 39 obvious and that claim 39 is in condition for immediate allowance.

Summary

In light of the foregoing Amendments and Remarks, Applicant submits that all of the pending claims 1 through 41 of the present application, as amended, are in condition for immediate allowance. Reexamination and positive reconsideration of the present application is respectfully requested.

If the Examiner has any questions regarding this Amendment and Response, or if the Examiner feels that a telephone interview will aid the examination of the present application, the Examiner is invited to contact Alan Stewart at 612.371.5376.

Respectfully submitted,
MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

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By: ARS
Name: Alan R. Stewart
Reg. No.: 47,974
ARS:pll